ABSTRACT OF THE DISCLOSURE

An optical element having a high capture efficiency and rim intensity is provided. The optical element includes a central axis, a first curved surface extending in the transverse direction with respect to the central axis, a second curved surface extending in the transverse direction with respect to the central axis, and a peripheral surface extending between the first curved surface and the second curved surface. Light is refracted from the time light is incident on the first curved surface to the time the light is emitted from the second curved surface. Thereby, a light intensity distribution of the light emitted from the second curved surface and a light intensity distribution of the light incident on the first curved surface are different from each other, and a rim intensity improvement rate R, which is a rate of the rim intensity of the emitted light with respect to the rim intensity of the incident light is 1.07 or more and 1.5 or less, in which the rim intensity represents a ratio of the central intensity to the peripheral intensity.
Selected Figure: Fig. 2